years were lower for all methods. Inter-reader ICCs over 2 and 6 years, respectively, were 0.19 and 0.57 OARSI, 0.15 and 0.47 for KL, and 0.31 and 0.71 for VV. The percentage of patients with progression based on the SDC for each reader is shown in the table. Kappas for agreement on progression between readers after 2 years ranged from 0.26 to 0.38 for OARSI, 0.08 to 0.38 for KL and 0.12 to 0.50 for VV. After 6 years kappas ranged from 0.40 to 0.56 for OARSI, 0.37 to 0.53 for KL and 0.45 to 0.66 for VV. Sensitivity to change expressed by the SRM was moderate to large over both follow-up periods.

Intra-reader ICC, percentage progression and SRMs over 2-yr and 6-yr follow-up for OARSI, KL and VV

Method	Reader	2-yr		6-yr	
		Progression	SRM	Progression	SRM
OARSI	1	27%	0.56	48%	0.82
	2	23%	0.65	57%	1.08
	3	10%	0.73	34%	1.17
KL	1	19%	0.58	51%	1.10
	2	24%	0.82	57%	1.25
	3	12%	0.84	42%	1.33
VV	1	20%	0.45	30%	0.59
	2	11%	0.46	23%	0.62
	3	17%	0.92	36%	1.12

Conclusions: This multicenter study shows that cross-sectional reproducibility is high for all methods. However, longitudinal reproducibility is moderate for all three scoring methods, even if trained readers and methods to enhance consistency are used. Sensitivity to change was high, indicating that radiological changes can be detected over a two year period. More research on the clinimetric properties of radiological scoring methods for hand OA is needed to determine their value in clinical research.

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INFLAMMATORY CHARACTERISTICS ON ULTRASOUND PREDICT POORER LONG-TERM RESPONSE TO INTRAARTICULAR CORTICOSTEROID INJECTIONS IN KNEE OSTEOARTHRITIS

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Purpose: To assess whether inflammation on ultrasound is predictive of clinical response to intraarticular corticosteroid injections in patients with knee osteoarthritis (OA).
Methods: Patients with symptomatic knee OA were included in the study. Patients were randomized to receive either an intraarticular injection of 40mg of triamcinolone acetonide in the treatment group or 1cc of 0.9% saline in the placebo group. Clinical response was assessed by changes in baseline WOMAC scores and physician global assessment at 4 and 12 weeks. Ultrasounds were performed at each visit.
Results: 79 patients were enrolled into the study. Four-week data are available for 67 patients in the primary analysis. There was no change in the WOMAC pain subscale score from baseline to 4 weeks in the control group. There was a significant improvement in WOMAC pain subscale score from 10.8 (SD $\pm$ 3.2) at baseline to 8.75 (SD $\pm$ 4.0) at 4 weeks in the treatment group ($p<0.001$). Of the 34 patients in the treatment group, 16 patients (47%) had inflammatory disease and 18 patients (53%) had noninflammatory disease as determined by ultrasound. There was no difference in the change in WOMAC pain subscale score between the inflammatory and noninflammatory patients in the treatment group at 4 weeks. However, there was a statistically significant greater improvement in WOMAC pain subscale score among noninflammatory patients than among inflammatory patients at 12 weeks.
Conclusions: Intraarticular corticosteroid injections are an effective treatment for symptomatic knee OA compared to placebo. Patients with noninflammatory characteristics on ultrasound appeared to have more prolonged benefit from IA corticosteroids compared to inflammatory patients. This could be due to more aggressive baseline inflammatory disease activity superseding the benefit of corticosteroids over time. Further studies should be done to characterize the role of inflammation as a potential target for treatment in OA.

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BONE MARROW LESIONS IN PEOPLE WITH KNEE OSTEOARTHRITIS PREDICT PROGRESSION OF DISEASE AND JOINT REPLACEMENT

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Purpose: The presence of bone marrow lesions (BMLs) have been linked to pain and progression of disease in knee osteoarthritis (OA). This study aims to determine the relationship between bone marrow lesions (BMLs) and cartilage volume at baseline, cartilage volume loss over 2 years, and risk of knee joint replacement over 4 years, in subjects with knee OA.
Methods: One hundred and nine men and women with mild to moderate symptomatic knee OA were recruited to have MRIs performed at baseline and 2 years later to assess knee structure, including tibial cartilage volume and BMLs. They were contacted at 4 years to determine whether they had a knee replacement.
Results: BMLs were present in 66% of the subjects at baseline. BMLs was negatively associated with total tibial cartilage volume at baseline (B -129.19 ml; 95%CI -215.28, -43.09), as well as medial and lateral tibial cartilage volumes ($p<0.001$ and $p=0.004$ respectively). One hundred participants had a second MRI, approximately 2 years later. There were no significant differences between those who had a BML at follow up and those who did not. Subjects with a higher BML score at baseline had increased total tibial cartilage volume loss ($p=0.01$) and are at greater risk of having a knee joint replacement over 4 years (OR 1.44; 95%CI 1.03, 2.02) than those without BMLs present.
Conclusions: In participants with symptomatic knee OA, the prevalence and severity of BMLs are associated with less total tibial cartilage and greater cartilage loss over 2 years. People with symptomatic knee OA with BML are more susceptible to requiring a knee joint replacement over 4 years. Our study suggests that it may be possible to use BMLs to detect those who are at higher risk of disease progression, which may enable early detection and better management of the disease to prevent progression and the subsequent need for surgery.

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CLINICAL PREDICTORS OF ELECTIVE TOTAL JOINT REPLACEMENT IN PERSONS WITH END STAGE KNEE OSTEOARTHRITIS

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Purpose: Arthritis is a leading cause of disability in the United States. Total knee arthroplasty (TKA) has become the gold stan-